STIC Search Report
EIC 1700

STIC Database Tracking Number: 116623

TO: Ling Xu
Location: REMSEN 5D60
Art Unit : 1775
March 17, 2004

Case Serial Number: 10/686663

From: Kathleen Fuller
Location: EIC 1700
REMSEN 4B28
Phone: 571/272-2505
Kathleen.Fuller@uspto.gov

Search Notes

STIC Search Results Feedback Form

EIC17000

Questions about the scope or the results of the search? Contact ***the EIC searcher or contact:***

Kathleen Fuller, EIC 1700 Team Leader
571/272-2505 REMSEN 4B28

Voluntary Results Feedback Form

- *I am an examiner in Workgroup:* ☐ *Example: 1713*
- *Relevant prior art **found**, search results used as follows:*
  - ☐ 102 rejection
  - ☐ 103 rejection
  - ☐ Cited as being of interest.
  - ☐ Helped examiner better understand the invention.
  - ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
  (journal articles, conference proceedings, new product announcements etc.)

- *Relevant prior art **not found:***
  - ☐ Results verified the lack of relevant prior art (helped determine patentability).
  - ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

Drop off or send completed forms to EIC1700 REMSEN 4B28

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Ling Xu Examiner # : 77924 Date: 3/6/04
Art Unit: 1615 Phone Number 30 Serial Number: 10/656,603
Mail Box and Bldg/Room Location: 5C60 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: _____

Inventors (please provide full names): _____

_____

Earliest Priority Filing Date: _____

***For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.**

See attached

****

STAFF USE ONLY		Type of Search		Vendors and cost where applicable	
Searcher:	K. Fuller	NA Sequence (#)		STN	✓
Searcher Phone #:		AA Sequence (#)		Dialog	
Searcher Location:		Structure (#)		Questel/Orbit	
Date Searcher Picked Up:		Bibliographic		Dr.Link	
Date Completed:	3/17/04	Litigation		Lexis/Nexis	
Searcher Prep & Review Time:	30	Fulltext		Sequence Systems	
Clerical Prep Time:		Patent Family		WWW/Internet	
Online Time:	99	Other		Other (specify)	

PTO-1590 (1-2000)

=> file reg
FILE 'REGISTRY' ENTERED AT 09:15:51 ON 17 MAR 2004
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES: 16 MAR 2004 HIGHEST RN 663883-43-0
DICTIONARY FILE UPDATES: 16 MAR 2004 HIGHEST RN 663883-43-0

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2004

Please note that search-term pricing does apply when
conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

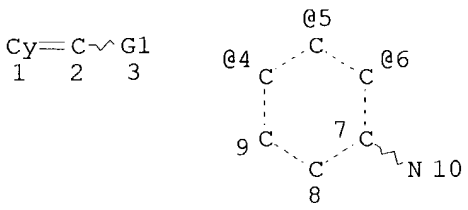
Experimental and calculated property data are now available. For more
information enter HELP PROP at an arrow prompt in the file or refer
to the file summary sheet on the web at:
http://www.cas.org/ONLINE/DBSS/registryss.html

=> file hcaplus
FILE 'HCAPLUS' ENTERED AT 09:15:56 ON 17 MAR 2004
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

FILE COVERS 1907 - 17 Mar 2004 VOL 140 ISS 12
FILE LAST UPDATED: 16 Mar 2004 (20040316/ED)

This file contains CAS Registry Numbers for easy and accurate
substance identification.

=> d que
L1 STR



15,822 structures from this query which covers all claims

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VAR G3=CY/AK
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DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS  24

STEREO ATTRIBUTES: NONE
L2                SCR 1839 AND 1992
L3                SCR 1015 OR 1054
L4                SCR 1609 OR 1607
L5                SCR 1918 OR 2043 OR 2040
L6          15822 SEA FILE=REGISTRY SSS FUL L1 AND L2 AND L3 AND L4 NOT L5
L9                STR
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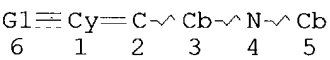

Subset search for formulas in claims 7 and 8

453 structures

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VAR G1=O/S/C/N
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DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS   6

STEREO ATTRIBUTES: NONE
L12           453 SEA FILE=REGISTRY SUB=L6 SSS FUL L9
L13           101 SEA FILE=HCAPLUS ABB=ON  L12
L14             6 SEA FILE=HCAPLUS ABB=ON  L13(L)(EL OR ?LUMINES? OR LIGHT?(2A)?E
                  MIT?)
L15             2 SEA FILE=HCAPLUS ABB=ON  L13(L)FLUORESC?
L16             7 SEA FILE=HCAPLUS ABB=ON  L14 OR L15
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7 CA references with ability

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=> d l16 all 1-7 hitstr
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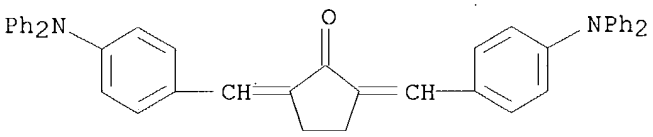
L16 ANSWER 1 OF 7 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:157702 HCAPLUS
DN 139:14803
ED Entered STN: 03 Mar 2003
TI Fluorescence quenching of the ketocyanine dyes in polar solvents: anti-TICT behavior
AU Doroshenko, A. O.; Pivovarenko, V. G.
CS Institute for Chemistry, Kharkov V.N. Karazin National University, Kharkov, 61077, Ukraine
SO Journal of Photochemistry and Photobiology, A: Chemistry (2003), 156(1-3), 55-64
CODEN: JPPCEJ; ISSN: 1010-6030
PB Elsevier Science B.V.
DT Journal
LA English
CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 73
AB Spectral properties and fluorescence decay in a series of differently N-substituted ketocyanine dyes belonging to the dibenzalcyclopentanone type were studied in solvents of various polarity and hydrogen bonding ability. The significant solvent-induced fluorescence quenching was explained by the increase of internal conversion rate owing to the lowering of the energy gap between S1 and S0 states in polar solvents. The alternative model of non-luminescent TICT states formation was shown to be less probable in the discussed series.
ST fluorescence quenching ketocyanine dye polar solvent
IT Excited state
(charge-transfer; solvent-induced fluorescence quenching of ketocyanine dyes in relation to to formation of twisted intramol. charge transfer state)
IT Fluorescence decay
Hydrogen bond
Molecular structure-property relationship
Singlet state transition
Solvatochromism
Solvent polarity effect
(fluorescence of dibenzalcyclopentanone-type ketocyanine dyes in solvents of various polarity and hydrogen bonding ability)
IT Nonradiative transition
(kinetics; fluorescence of dibenzalcyclopentanone-type ketocyanine dyes in solvents of various polarity and hydrogen bonding ability)
IT AM1 MO (molecular orbital)
Bond angle
(mol. geometry AM1 calcns. for ketocyanine dyes in relation to solvent-induce quenching of fluorescence of these dye)
IT Molecular structure
(of ketocyanine dyes in relation to solvent-induce quenching of fluorescence of these dye)
IT Fluorescence quenching
(solvent-induced; fluorescence of dibenzalcyclopentanone-type ketocyanine dyes in solvents of various polarity and hydrogen bonding ability)
IT 19226-99-4 **122655-49-6** 125594-50-5 129236-69-7 294191-74-5 534590-95-9
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process)
(**fluorescence** of dibenzalcyclopentanone-type ketocyanine dyes

in solvents of various polarity and hydrogen bonding ability)
IT 64-17-5, Ethanol, properties 67-56-1, Methanol, properties 67-63-0, Isopropanol, properties 68-12-2, DMF, properties 75-05-8, Acetonitrile, properties 108-88-3, Toluene, properties 123-86-4, Butyl acetate 123-91-1, Dioxane, properties
RL: PRP (Properties)
(solvent effect; fluorescence of dibenzalcyclopentanone-type ketocyanine dyes in solvents of various polarity and hydrogen bonding ability)
RE.CNT 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Al-Ansari, I; J Phys Org Chem 1997, V10, P687 HCAPLUS
(2) Arzheukova, N; Russ J Phys Chem (English Translation) 1982, V56, P1212
(3) Avouris, P; Chem Rev 1977, V77, P793 HCAPLUS
(4) Banerjee, D; Ind J Chem Sect A 1995, V34, P94
(5) Banerjee, D; J Photochem Photobiol Part A: Chem 1996, V98, P183 HCAPLUS
(6) Barltrop, J; Excited States in Organic Chemistry 1975
(7) Biczok, L; J Phys Chem A 1999, V103, P3837 HCAPLUS
(8) Danilov, V; Russ J Phys Chem (English Translation) 1984, V58, P556
(9) Das, P; Spectrochim Acta Part A 2000, V56, P2763 MEDLINE
(10) Dewar, M; J Am Chem Soc 1985, V107, P3902 HCAPLUS
(11) Doroshenko, A; J Fluor 2002, V12, P451
(12) Doroshenko, A; J Photochem Photobiol Part A: Chem 1996, V94, P15 HCAPLUS
(13) Doroshenko, A; Mol Eng 1999, V8, P199
(14) Doroshenko, A; Russ Chem Bull, Intl Ed 2001, V50, P404 HCAPLUS
(15) El-Sayed, M; J Phys Chem 1963, V38, P2834 HCAPLUS
(16) Gao, F; Dyes Pigments 2000, V47, P231 HCAPLUS
(17) Gibson, E; Chem Phys Lett 1987, V136, P454 HCAPLUS
(18) Gordon, A; A Handbook of Practical Data, Techniques and References 1972
(19) Grabowski, Z; Acta Phys Pol A 1987, V71, P743
(20) Grabowski, Z; Nouv J Chim 1979, V3, P443 HCAPLUS
(21) Jurczok, M; J Phys Chem A 1999, V103, P3372 HCAPLUS
(22) Kobayashi, T; Chem Phys Lett 1987, V141, P450 HCAPLUS
(23) Marcotte, N; J Chem Soc, Perkin Trans 2000, V2, P1711
(24) Marcotte, N; J Phys Chem A 1999, V103, P3163 HCAPLUS
(25) Parker, C; Photoluminescence of Solutions 1968
(26) Parusel, A; J Phys Chem A 1998, V102, P7149 HCAPLUS
(27) Pivovarenko, V; Chem Phys Lett 2000, V325, P389 HCAPLUS
(28) Pramanik, R; Chem Phys Lett 2001, V341, P507 HCAPLUS
(29) Reichardt, C; Chem Rev 1994, V94, P2319 HCAPLUS
(30) Rettig, W; Angew Chem Intl Ed 1986, V25, P971
(31) Rurack, K; J Phys Chem A 1999, V103, P9626 HCAPLUS
(32) Rurack, K; J Phys Chem A 2000, V104, P3087 HCAPLUS
(33) Sachs, F; Chem Ber 1902, V35, P3569
(34) Siguta, M; Phys Chem Chem Phys 2001, V3, P2012
(35) Valeur, B; Molecular Fluorescence 2002
(36) Yamashita, K; J Photochem Photobiol Part A: Chem 2000, V135, P135 HCAPLUS
(37) Yatsuhashi, T; J Phys Chem A 1998, V102, P8657 HCAPLUS
(38) Yuan, D; J Phys Chem A 1997, V101, P3461 HCAPLUS
IT **122655-49-6**
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process)
(**fluorescence** of dibenzalcyclopentanone-type ketocyanine dyes in solvents of various polarity and hydrogen bonding ability)
RN 122655-49-6 HCAPLUS
CN Cyclopentanone, 2,5-bis[[4-(diphenylamino)phenyl]methylene]- (9CI) (CA INDEX NAME)

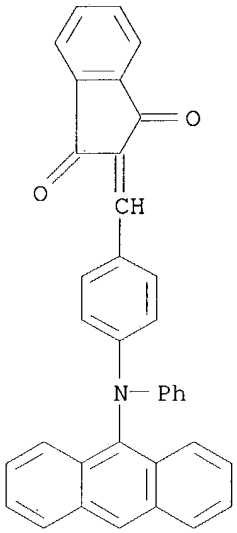


L16 ANSWER 2 OF 7 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2001:932596 HCAPLUS
DN 136:61299
ED Entered STN: 27 Dec 2001
TI Electroluminescent device using styrylamines
IN Arai, Kazumi
PA Fuji Photo Film Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 33 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C09K011-06
ICS C09K011-06; C07C225-22; C07D209-88; C07D333-36; C07D401-12; C07D409-12; C07D413-12; C07D417-12; C07D471-04; H05B033-14
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 74
FAN.CNT 1

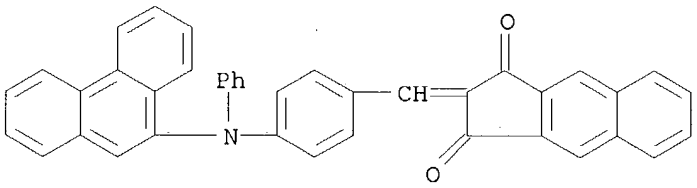
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2001354955	A2	20011225	JP 2000-177761	20000614
PRAI JP 2000-177761		20000614		

OS MARPAT 136:61299
AB The invention relates to a red-emitting electroluminescent device comprising R1R2R3N [R1-3 = (un)substituted aryl, hetercyclyl, aliphatic hydrocarbyl; ≥2 of R1-3 is aryl or heterocyclyl; ≥1 of R1-3 is aryl or heterocyclyl formed by ≥3 rings; ≥2 of R1-3 may form a ring; ≥1 R1-3 is substituted by a group (5 - 7 membered ring):C(R4)(CR5:CR6)m- (R4-6 = H, substituent; m = 0, 1 or 2)]. The red luminous component offers superior in color purity.
ST styrylamine red emitting electroluminescent device
IT Electroluminescent devices
Luminescence
(of red light-emitting component using chemical compds. and styrylamines)
IT **382601-08-3P 382601-09-4P 382601-10-7P**
382601-11-8P 382601-12-9P 382601-13-0P
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(**electroluminescent** devices using styrylamines)
IT 852-38-0, PBD 905-62-4, 2,5-Bis(1-naphthyl)-1,3,4-oxadiazole 25067-59-8, Poly(N-vinylcarbazole) 65181-78-4, TPD 313950-73-1
RL: DEV (Device component use); USES (Uses)
(electroluminescent devices using styrylamines and)
IT **382601-08-3P 382601-09-4P 382601-10-7P**
382601-11-8P 382601-12-9P 382601-13-0P
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(**electroluminescent** devices using styrylamines)
RN 382601-08-3 HCAPLUS

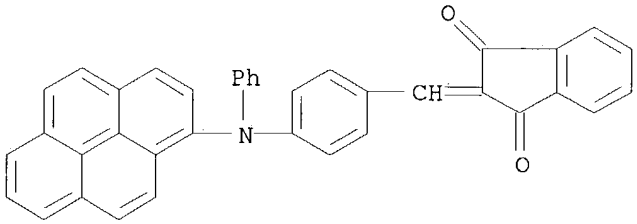
CN 1H-Indene-1,3(2H)-dione, 2-[[4-(9-anthracenylphenylamino)phenyl]methylene]- (9CI) (CA INDEX NAME)



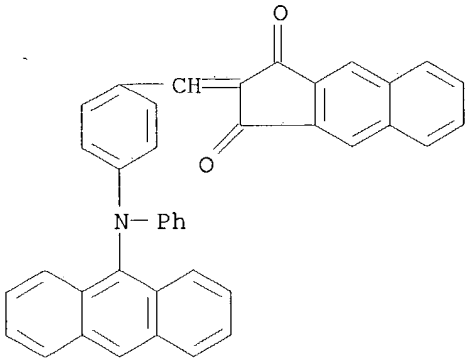
RN 382601-09-4 HCAPLUS
CN 1H-Benz[f]indene-1,3(2H)-dione, 2-[[4-(9-phenanthrenylphenylamino)phenyl]methylene]- (9CI) (CA INDEX NAME)



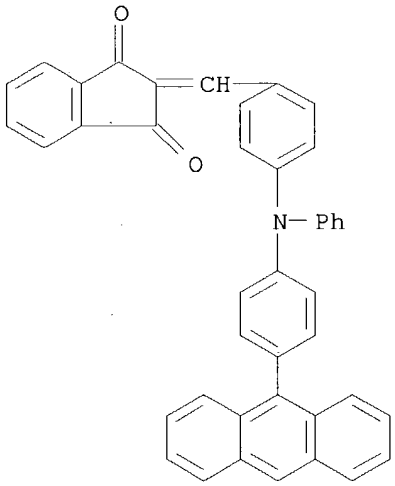
RN 382601-10-7 HCAPLUS
CN 1H-Indene-1,3(2H)-dione, 2-[[4-(phenyl-1-pyrenylamino)phenyl]methylene]- (9CI) (CA INDEX NAME)



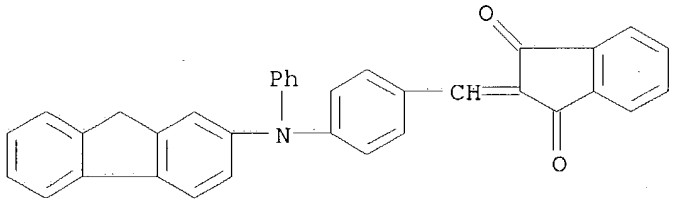
RN 382601-11-8 HCAPLUS
CN 1H-Benz[f]indene-1,3(2H)-dione, 2-[[4-(9-anthracenylphenylamino)phenyl]methylene]- (9CI) (CA INDEX NAME)



RN 382601-12-9 HCAPLUS
CN 1H-Indene-1,3(2H)-dione, 2-[[4-[[4-(9-anthracenyl)phenyl]phenylamino]phenyl]methylene]- (9CI) (CA INDEX NAME)



RN 382601-13-0 HCAPLUS
CN 1H-Indene-1,3(2H)-dione, 2-[[4-(9H-fluoren-2-ylphenylamino)phenyl]methylene]- (9CI) (CA INDEX NAME)



L16 ANSWER 3 OF 7 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2001:269430 HCAPLUS
DN 134:287647

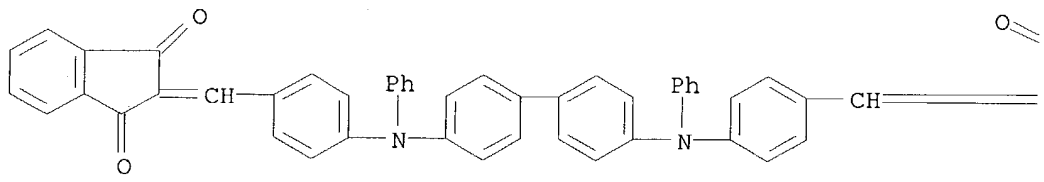
KATHLEEN FULLER EIC 1700 REMSEN 4B28 571/272-2505

ED Entered STN: 17 Apr 2001
TI Luminescent material, luminescent component and amine compound
IN Arai, Kazumi
PA Fuji Photo Film Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 37 pp. App.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C09K011-06
ICS C09K011-06; C07C225-22; C07D223-26; C07D231-22; C07D239-60; C07D309-34; C07D311-58; C07D333-60; C07D333-64; C07D405-14; C07D409-14; C07D413-14; C07D417-14; H05B033-14
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
FAN.CNT 2

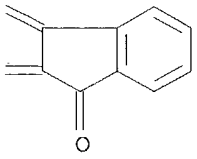
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001107037	A2	20010417	JP 1999-347784	19991207
PRAI	JP 1999-66923	A	19990312		
	JP 1999-209820	A	19990723		
	JP 1999-222520	A	19990805		

OS MARPAT 134:287647
AB The invention refers to a luminescent component, suitable for use in display devices, containing an amine NR1R2R3 {R1-3 = aryl, heterocyclic, or aliphatic hydrocarbon, where at least two of the three are aryl or heterocyclic, and may be joined to form 5 - 7 membered rings, and at least two are Z1:C(R4)-(R5C:CR6)m- [R4-6 = H, or functional group; Z1 = 5 - 7 membered ring; m = 0, 1, or 2]}.
ST electroluminescent device amine
IT Electroluminescent devices
(luminescent material, luminescent component and amine compound)
IT 852-38-0, PBD 905-62-4, 2,5-Bis(1-naphthyl)-1,3,4-oxadiazole 1450-63-1, 1,1,4,4-Tetraphenyl butadiene 2085-33-8, Aluminum tris(8-hydroxy quinolinato) 25067-59-8, Poly(N-vinyl carbazole) 65181-78-4, TPD 123847-85-8 **333384-03-5 333384-04-6**
RL: DEV (Device component use); USES (Uses)
(**luminescent** material, **luminescent** component and amine compound)
IT **333384-03-5 333384-04-6**
RL: DEV (Device component use); USES (Uses)
(**luminescent** material, **luminescent** component and amine compound)
RN 333384-03-5 HCAPLUS
CN 1H-Indene-1,3(2H)-dione, 2,2'-[[1,1'-biphenyl]-4,4'-diylbis[(phenylimino)-4,1-phenylenemethylidyne]]bis- (9CI) (CA INDEX NAME)

PAGE 1-A

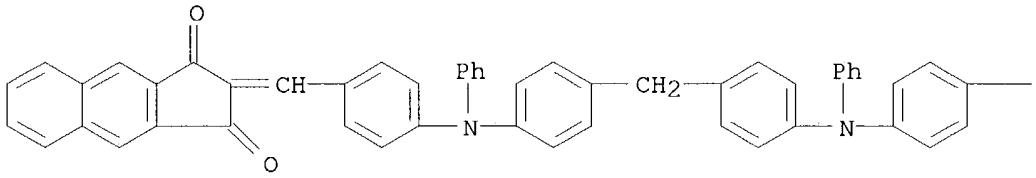


PAGE 1-B

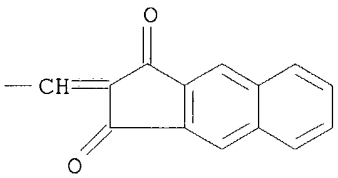


RN 333384-04-6 HCAPLUS
CN 1H-Benz[f]indene-1,3(2H)-dione, 2,2'-[methylenebis[4,1-phenylene(phenylimino)-4,1-phenylenemethylidyne]]bis- (9CI) (CA INDEX NAME)

PAGE 1-A



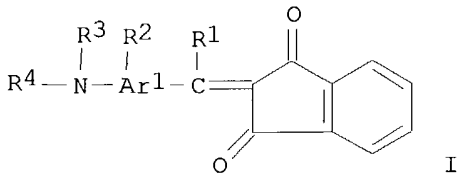
PAGE 1-B



L16 ANSWER 4 OF 7 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2001:89729 HCAPLUS
DN 134:139033
ED Entered STN: 07 Feb 2001
TI A novel methine compound, luminescent material and component
IN Yanagi, Terukazu; Arai, Kazumi
PA Fuji Photo Film Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 18 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C09K011-06
ICS C09K011-06; C07C225-22; C07D209-86; C07D215-14; C07D223-22; C07D241-46; C07D265-38; C07D279-22; C07D333-36; C09B023-00; H05B033-14
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
FAN.CNT 1

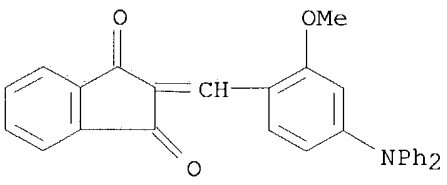
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

PI JP 2001031961 A2 20010206 JP 1999-204860 19990719
PRAI JP 1999-204860 19990719
OS MARPAT 134:139033
GI



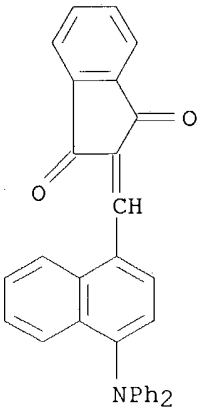
I

AB The invention refers to a novel methine compound, suitable for use as a luminescent material, I [R1,3,4 = H, of other substituent; R2 = substituents, if more than one R2 is present, they may join together to form a ring; Ar1 = trivalent or multivalent aryl; and R1,2, R2,3, and R3,4 may join together to form rings.].
ST methine phosphor electroluminescent device
IT Electroluminescent devices
Phosphors
(a novel methine compound, luminescent material and component)
IT 905-62-4 1450-63-1, 1,1,4,4-Tetraphenyl butadiene 2085-33-8, Aluminum tris(8-hydroxyquinolinato) 15082-28-7, 2-(4-Biphenylyl)-5-(4-tert-butylphenyl_1,3,4-oxadiazole 25067-59-8, Poly(N-vinylcarbazole) 37271-44-6 50926-11-9, ITO 51325-91-8, DCM 65181-78-4, TPD **322471-19-2 322471-22-7** 322471-23-8 **322471-24-9**
RL: DEV (Device component use); USES (Uses)
(a novel methine compound, **luminescent** material and component)
IT **110730-90-0P 322471-20-5P 322471-21-6P**
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(a novel methine compound, **luminescent** material and component)
IT 606-23-5, 1,3-Indandione 42481-49-2 42906-19-4 89115-20-8 89115-21-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(a novel methine compound, luminescent material and component)
IT **322471-19-2 322471-22-7 322471-24-9**
RL: DEV (Device component use); USES (Uses)
(a novel methine compound, **luminescent** material and component)
RN 322471-19-2 HCAPLUS
CN 1H-Indene-1,3(2H)-dione, 2-[[4-(diphenylamino)-2-methoxyphenyl]methylene]-(9CI) (CA INDEX NAME)

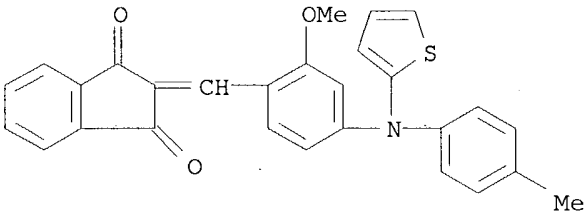


RN 322471-22-7 HCAPLUS
CN 1H-Indene-1,3(2H)-dione, 2-[[4-(diphenylamino)-1-naphthalenyl]methylene]-

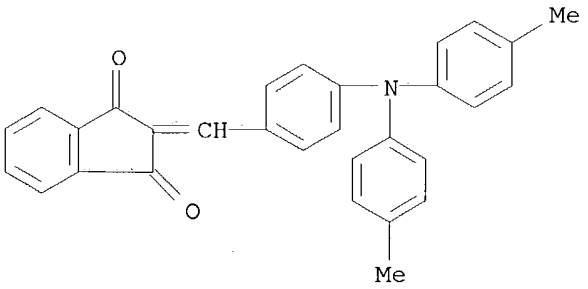
(9CI) (CA INDEX NAME)



RN 322471-24-9 HCAPLUS
CN 1H-Indene-1,3(2H)-dione, 2-[[2-methoxy-4-[(4-methylphenyl)-2-thienylamino]phenyl]methylene]- (9CI) (CA INDEX NAME)

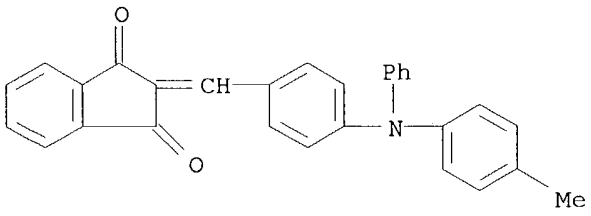


IT **110730-90-0P 322471-20-5P 322471-21-6P**
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(a novel methine compound, **luminescent** material and component)
RN 110730-90-0 HCAPLUS
CN 1H-Indene-1,3(2H)-dione, 2-[[4-[bis(4-methylphenyl)amino]phenyl]methylene]- (9CI) (CA INDEX NAME)

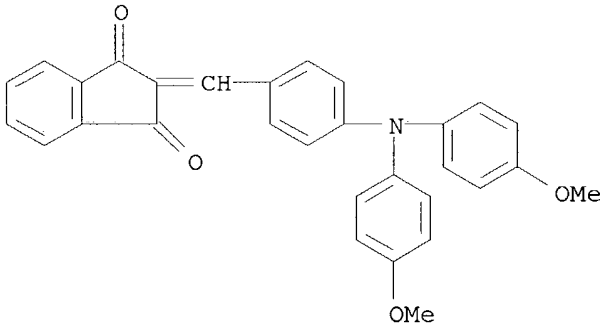


RN 322471-20-5 HCAPLUS
CN 1H-Indene-1,3(2H)-dione, 2-[[4-[(4-methylphenyl)phenylamino]phenyl]methyle

ne]- (9CI) (CA INDEX NAME)



RN 322471-21-6 HCAPLUS
CN 1H-Indene-1,3(2H)-dione, 2-[[4-[bis(4-methoxyphenyl)amino]phenyl]methylene]- (9CI) (CA INDEX NAME)

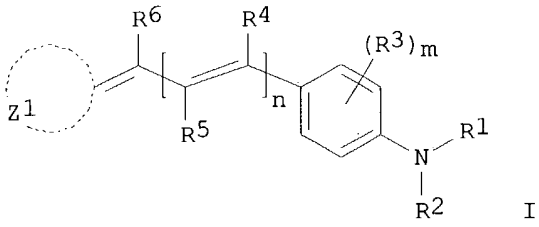


L16 ANSWER 5 OF 7 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2000:748825 HCAPLUS
DN 133:303297
ED Entered STN: 24 Oct 2000
TI Organic electroluminescent material, device therewith, and triarylamine compound as fluorescent dye
IN Arai, Kazumi; Yanagi, Terukazu
PA Fuji Photo Film Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 34 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C07C225-22
ICS C07D209-86; C07D239-60; C07D277-28; C07D277-30; C07D277-34; C07D277-36; C07D333-36; C07D333-60; C07D333-64; C07D409-10; C07D409-12; C07D417-10; C09K011-06; H05B033-14
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 25, 41
FAN.CNT 2

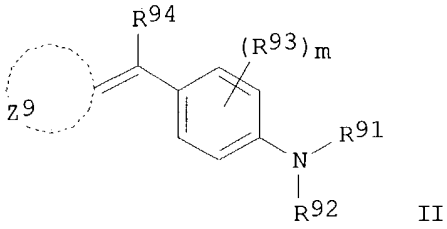
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000297068	A2	20001024	JP 1999-237266	19990824
	US 6689491	B1	20040210	US 2000-499460	20000207
PRAI	JP 1999-30190	A	19990208		

applicants

JP 1999-66923 A 19990312
JP 1999-209820 A 19990723
JP 1999-237266 A 19990824
OS MARPAT 133:303297
GI



I



II

AB The material is represented by I [R1, R2 = aryl, heterocycle, alicyclic group (R1 and/or R2 = aryl or heterocycle); R3 = substituents; m = 0-4; R4-6 = H, substituents; Z1 = 5-7-membered ring; n = 0-2]. The triarylamine compound is styrylamine derivative II (R91, R92 = aryl, heterocycle; R93 = substituents; R94 = H, alkyl, alkenyl, acyl, sulfonyl, alkoxycarbonyl, carbonamido, cyano; Z9 = substituted 1,3-indandione, furanone, oxindole, etc.). The electroluminescent device, showing high-luminance display without dark spots, has a (polymer) layer dispersing the above compound

ST electroluminescent device arylamine dark spot prevention; styrylamine fluorescent dye electroluminescent device; indanone nuclei styrylamine electroluminescent dye

IT Amines, uses
RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(aromatic, fluorescent dye; organic electroluminescent device including styrylamine derivative and showing high-luminance display)

IT Electroluminescent devices
Fluorescent dyes
(organic electroluminescent device including styrylamine derivative and showing high-luminance display)

IT 25067-59-8, Poly(N-vinylcarbazole)
RL: DEV (Device component use); USES (Uses)
(emission layer; organic electroluminescent device including styrylamine derivative and showing high-luminance display)

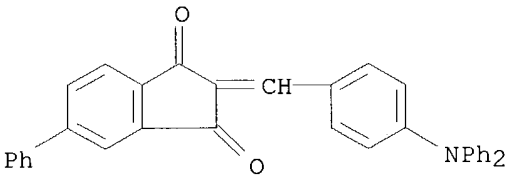
IT 5694-20-2DP, Styrylamine, derivative **301301-22-4P**
301301-23-5P 301301-24-6P 301301-25-7P
301301-26-8P
RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)

(**fluorescent** dye; organic **electroluminescent** device including styrylamine derivative and showing high-luminance display)

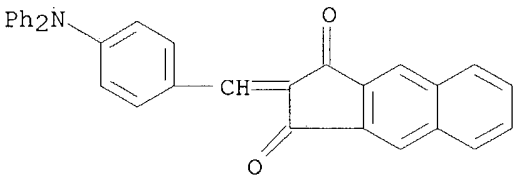
IT 4181-05-9, 4-(N,N-Diphenylamino)benzaldehyde 50919-76-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(in preparation of styrylamine derivative for fluorescent dye in electroluminescent device)

IT **301301-22-4P 301301-23-5P 301301-24-6P 301301-25-7P**
RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(**fluorescent** dye; organic **electroluminescent** device including styrylamine derivative and showing high-luminance display)

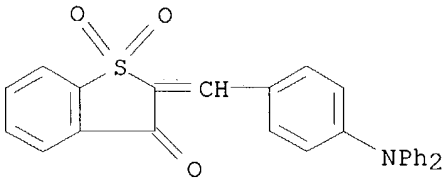
RN 301301-22-4 HCAPLUS
CN 1H-Indene-1,3(2H)-dione, 2-[[4-(diphenylamino)phenyl]methylene]-5-phenyl- (9CI) (CA INDEX NAME)



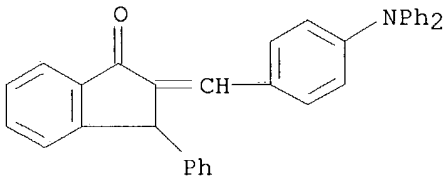
RN 301301-23-5 HCAPLUS
CN 1H-Benz[f]indene-1,3(2H)-dione, 2-[[4-(diphenylamino)phenyl]methylene]- (9CI) (CA INDEX NAME)



RN 301301-24-6 HCAPLUS
CN Benzo[b]thiophen-3(2H)-one, 2-[[4-(diphenylamino)phenyl]methylene]-, 1,1-dioxide (9CI) (CA INDEX NAME)



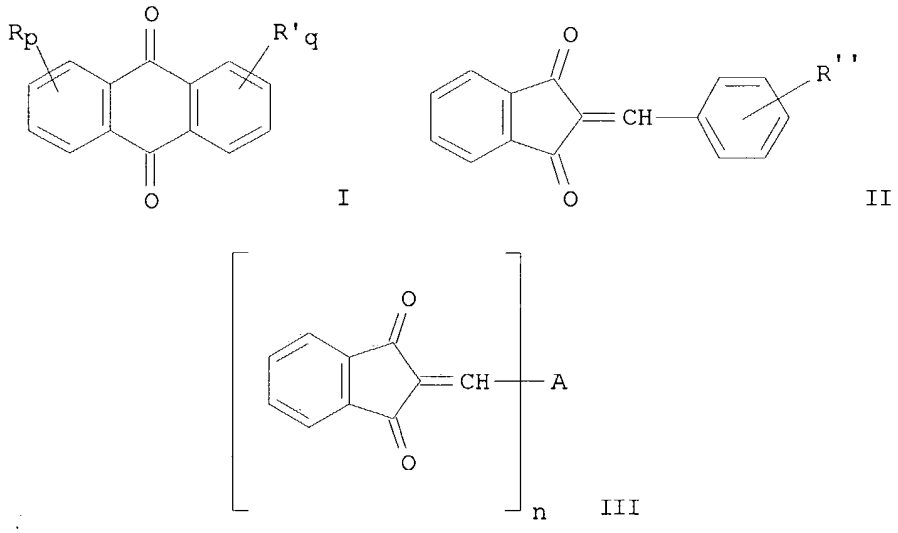
RN 301301-25-7 HCAPLUS
CN 1H-Inden-1-one, 2-[[4-(diphenylamino)phenyl]methylene]-2,3-dihydro-3-phenyl- (9CI) (CA INDEX NAME)



L16 ANSWER 6 OF 7 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1996:434790 HCAPLUS
DN 125:99699
ED Entered STN: 23 Jul 1996
TI Electroluminescent device containing anthraquinone derivative or indandione derivative
IN Murakami, Mutsuaki; Fukuyama, Masao; Suzuki, Mutsumi; Hashimoto, Mitsuru
PA Matsushita Electric Ind Co Ltd, Japan
SO Jpn. Kokai Tokkyo Koho, 13 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM H01L033-00
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 76
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 08097465	A2	19960412	JP 1994-233832	19940928
PRAI	JP 1994-233832		19940928		

OS MARPAT 125:99699
GI



AB The device contains an anthraquinone derivative I (R, R' = alkyl, alkoxycarbonyl, halo, NO2, CN; p, q = 1-4) or an indandione derivative II or

III (R" = alkyl, alkoxy, alkylamino, arylamino, NO2, CN, CF3, F, Cl, CO, butylcarbonyl, Ph; A = aryl, arylene; n = 1-2).

ST electroluminescent device anthraquinone electron transporting; indandione electron transporting EL device

IT Electroluminescent devices
(electroluminescent device containing anthraquinone derivative or indandione derivative in electron-transporting layer)

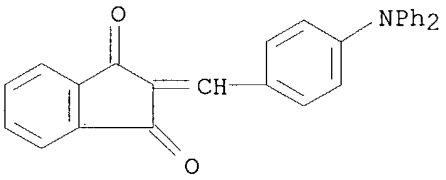
IT 84-47-9P 5381-33-9P 7421-76-3P 15875-51-1P 15875-54-4P
15875-55-5P 15875-56-6P 15875-60-2P 16210-62-1P 16210-64-3P
18913-75-2P 19371-91-6P 25364-82-3P 31316-87-7P 32358-72-8P
32358-73-9P 32712-59-7P 34200-53-8P 34200-56-1P 61499-33-0P
61499-34-1P **85299-18-9P** 95219-75-3P 136758-25-3P
143413-01-8P 171972-36-4P 178697-87-5P 178697-88-6P 178697-89-7P
178697-90-0P 178697-91-1P
RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(electron-transporting agent; **electroluminescent** device containing anthraquinone derivative or indandione derivative in electron-transporting layer)

IT 2085-33-8
RL: DEV (Device component use); USES (Uses)
(light-emitting material; electroluminescent device containing anthraquinone derivative or indandione derivative in electron-transporting layer)

IT **85299-18-9P**
RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(electron-transporting agent; **electroluminescent** device containing anthraquinone derivative or indandione derivative in electron-transporting layer)

RN 85299-18-9 HCAPLUS

CN 1H-Indene-1,3(2H)-dione, 2-[[4-(diphenylamino)phenyl]methylene]- (9CI) (CA INDEX NAME)



L16 ANSWER 7 OF 7 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1992:458371 HCAPLUS

DN 117:58371

ED Entered STN: 08 Aug 1992

TI Organic electroluminescent element

IN Ota, Masabumi; Onuma, Teruyuki; Kawamura, Fumio; Sakon, Hirota; Takahashi, Toshihiko

PA Ricoh Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C09K011-06
ICS H05B033-14; H05B033-22

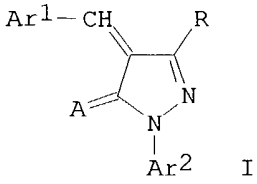
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 03163189	A2	19910715	JP 1990-191517	19900718
PRAI	JP 1989-219692		19890825		

OS MARPAT 117:58371

GI



I

AB The title element, suited for use in large area displays, comprises ≥1 organic compound thin-film layer sandwiched between a cathode and an anode layer, wherein ≥1 of the organic compound layers) contains I {R = (un)substituted alkyl, hydroxy carbonyl, alkyloxy carbonyl, (un)substituted carbamoyl, (un)substituted carbocyclic or heterocyclic aromatic ring; A = O, Ar3-N; Ar1-3 = (un)substituted carbocyclic or heterocyclic aromatic ring}. The element is fabricated readily by VPE, providing a durable, high-luminescence, variable color-emitting device.

ST electroluminescence org variable color device

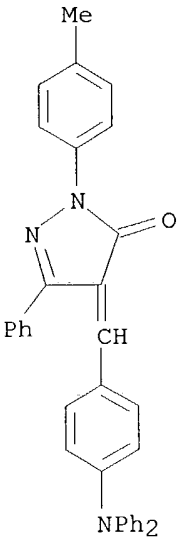
IT Electroluminescent devices
(variable visible color-emitting)

IT 15082-28-7 26895-92-1 55034-79-2 79926-38-8 79926-41-3
80165-63-5 **138996-98-2** 138996-99-3 138997-00-9 138997-01-0
138997-02-1 **138997-03-2** 138997-04-3
138997-05-4 138997-06-5 138997-07-6 138997-08-7
138997-09-8 138997-10-1 139023-36-2
RL: DEV (Device component use); USES (Uses)
(**electroluminescent** device from, as **light emitter** and/or electron or hole transporter)

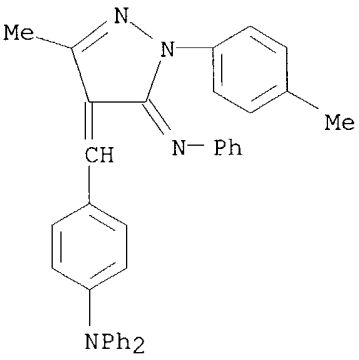
IT **138996-98-2** **138997-02-1** **138997-03-2**
138997-05-4
RL: DEV (Device component use); USES (Uses)
(**electroluminescent** device from, as **light emitter** and/or electron or hole transporter)

RN 138996-98-2 HCAPLUS

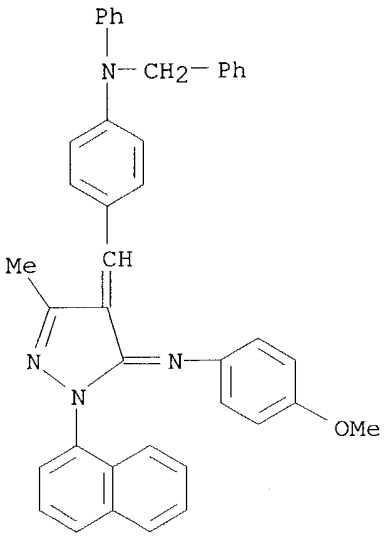
CN 3H-Pyrazol-3-one, 4-[[4-(diphenylamino)phenyl]methylene]-2,4-dihydro-2-(4-methylphenyl)-5-phenyl- (9CI) (CA INDEX NAME)



RN 138997-02-1 HCAPLUS
CN Benzenamine, 4-[[1,5-dihydro-3-methyl-1-(4-methylphenyl)-5-(phenylimino)-4H-pyrazol-4-ylidene]methyl]-N,N-diphenyl- (9CI) (CA INDEX NAME)

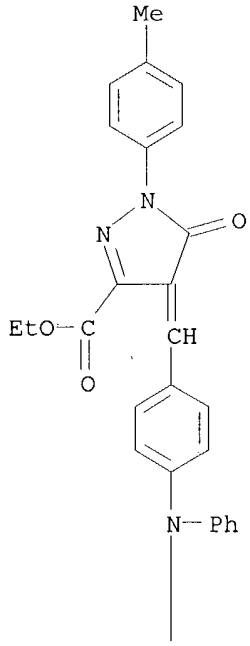


RN 138997-03-2 HCAPLUS
CN Benzenemethanamine, N-[4-[[1,5-dihydro-5-[(4-methoxyphenyl)imino]-3-methyl-1-(1-naphthalenyl)-4H-pyrazol-4-ylidene]methyl]phenyl]-N-phenyl- (9CI) (CA INDEX NAME)

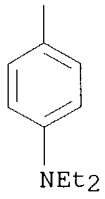


RN 138997-05-4 HCAPLUS
CN 1H-Pyrazole-3-carboxylic acid, 4-[[4-[[4-(diethylamino)phenyl]phenylamino]phenyl]methylene]-4,5-dihydro-1-(4-methylphenyl)-5-oxo-, ethyl ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



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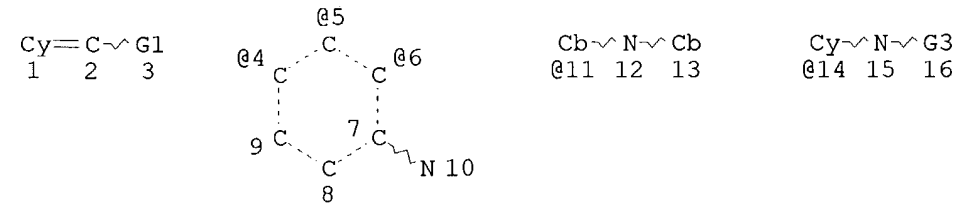
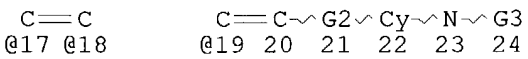
=> s l41
L42 2 L41

=> d que
L25 STR





VAR G1=6/5/4/11/14/19
REP G2=(0-1) 17-20 18-22
VAR G3=CY/AK
NODE ATTRIBUTES:
NSPEC IS R AT 10
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 24

STEREO ATTRIBUTES: NONE
L26 SCR 1839 AND 1992
L27 SCR 1015 OR 1054
L28 SCR 1609 OR 1607
L29 SCR 1918 OR 2043 OR 2040
L30 15822 SEA FILE=REGISTRY SSS FUL L25 AND L26 AND L27 AND L28 NOT L29
L39 STR

VAR G1=O/S/C/N
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 12

STEREO ATTRIBUTES: NONE
L41 4 SEA FILE=REGISTRY SUB=L30 SSS FUL L39
L42 2 SEA FILE=HCAPLUS ABB=ON L41

KATHLEEN FULLER EIC 1700 REMSEN 4B28 571/272-2505

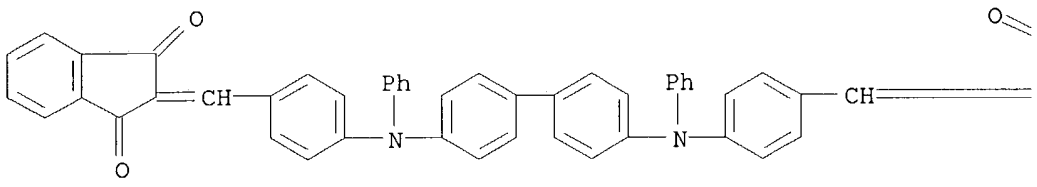
=> d l42 1-2 all hitstr

L42 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2001:269430 HCAPLUS
DN 134:287647
ED Entered STN: 17 Apr 2001
TI Luminescent material, luminescent component and amine compound
IN Arai, Kazumi
PA Fuji Photo Film Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 37 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C09K011-06
ICS C09K011-06; C07C225-22; C07D223-26; C07D231-22; C07D239-60; C07D309-34; C07D311-58; C07D333-60; C07D333-64; C07D405-14; C07D409-14; C07D413-14; C07D417-14; H05B033-14
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
FAN.CNT 2

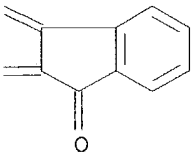
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001107037	A2	20010417	JP 1999-347784	19991207
PRAI	JP 1999-66923	A	19990312		
	JP 1999-209820	A	19990723		
	JP 1999-222520	A	19990805		

OS MARPAT 134:287647
AB The invention refers to a luminescent component, suitable for use in display devices, containing an amine NR1R2R3 {R1-3 = aryl, heterocyclic, or aliphatic hydrocarbon, where at least two of the three are aryl or heterocyclic, and may be joined to form 5 - 7 membered rings, and at least two are Z1:C(R4)-(R5C:CR6)m- [R4-6 = H, or functional group; Z1 = 5 - 7 membered ring; m = 0, 1, or 2]}.
ST electroluminescent device amine
IT Electroluminescent devices
(luminescent material, luminescent component and amine compound)
IT 852-38-0, PBD 905-62-4, 2,5-Bis(1-naphthyl)-1,3,4-oxadiazole 1450-63-1, 1,1,4,4-Tetraphenyl butadiene 2085-33-8, Aluminum tris(8-hydroxy quinolinato) 25067-59-8, Poly(N-vinyl carbazole) 65181-78-4, TPD 123847-85-8 **333384-03-5 333384-04-6**
RL: DEV (Device component use); USES (Uses)
(luminescent material, luminescent component and amine compound)
IT **333384-03-5 333384-04-6**
RL: DEV (Device component use); USES (Uses)
(luminescent material, luminescent component and amine compound)
RN 333384-03-5 HCAPLUS
CN 1H-Indene-1,3(2H)-dione, 2,2'-[[1,1'-biphenyl]-4,4'-diylbis[(phenylimino)-4,1-phenylenemethylidyne]]bis- (9CI) (CA INDEX NAME)

PAGE 1-A

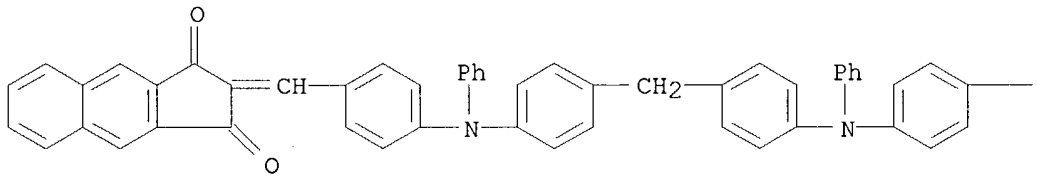


PAGE 1-B

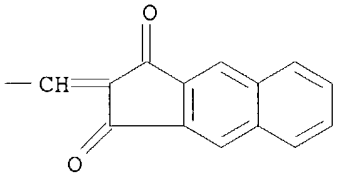


RN 333384-04-6 HCAPLUS
CN 1H-Benz[f]indene-1,3(2H)-dione, 2,2'-[methylenebis[4,1-phenylene(phenylimino)-4,1-phenylenemethylidyne]]bis- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

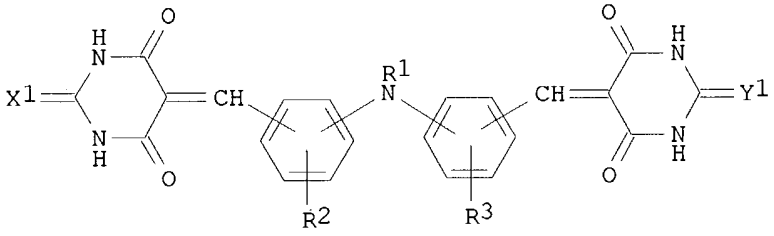


L42 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1995:735456 HCAPLUS
DN 123:127548
ED Entered STN: 15 Aug 1995
TI Electrophotographic photoreceptor having high sensitivity and low photomemory
IN Tanaka, Masato; Kashizaki, Yoshiro; Senoo, Akihiro
PA Canon Kk, Japan

SO Jpn. Kokai Tokkyo Koho, 19 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM G03G005-06
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 07120947	A2	19950512	JP 1993-286178	19931022
	JP 3145846	B2	20010312		
PRAI	JP 1993-286178		19931022		

OS MARPAT 123:127548
GI



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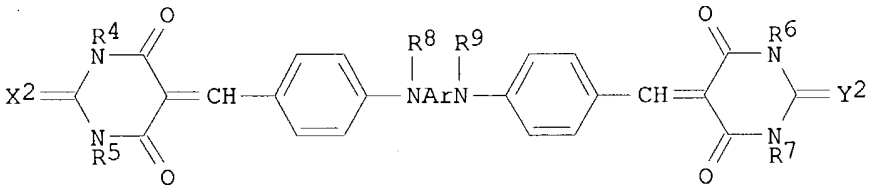


II

AB In the electrophotog. photoreceptor having a photosensitive layer on a conductive support, the photosensitive layer contains I (X1, Y1 = O, S; R1 = H, alkyl, acyl; R2,3 = H, halo, nitro, cyano) or II (R4-9 = H, alkyl, acyl, aralkyl, Ph; Ar = aromatic, heterocyclyl).

ST barbiturate photosensitive layer electrophotog photoreceptor; thiobarbiturate photosensitive layer electrophotog photoreceptor; hydrazone photosensitive layer electrophotog photoreceptor

IT Electrophotographic photoconductors and photoreceptors
(photosensitive layers)

IT Hydrazones
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(photosensitive layers of electrophotog. photoreceptors)

IT 166307-55-7P **166307-57-9P**
RL: DEV (Device component use); IMF (Industrial manufacture); MOA (Modifier or additive use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(photosensitive layer of electrophotog. photoreceptor)

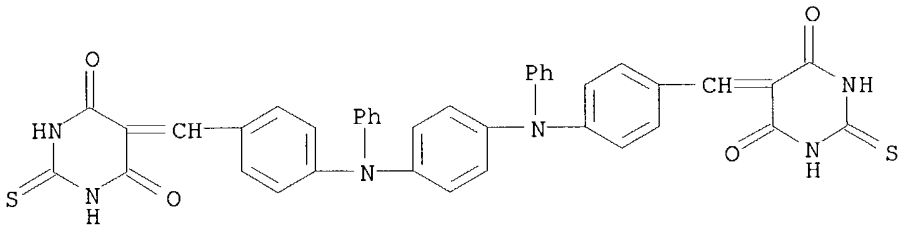
IT 85171-94-4 119344-14-8 132571-92-7 134957-46-3 166307-56-8

166307-58-0 166307-59-1 **166307-60-4** 166307-61-5
166307-62-6
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(photosensitive layer of electrophotog. photoreceptor)

IT **166307-57-9P**
RL: DEV (Device component use); IMF (Industrial manufacture); MOA (Modifier or additive use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(photosensitive layer of electrophotog. photoreceptor)

RN 166307-57-9 HCAPLUS

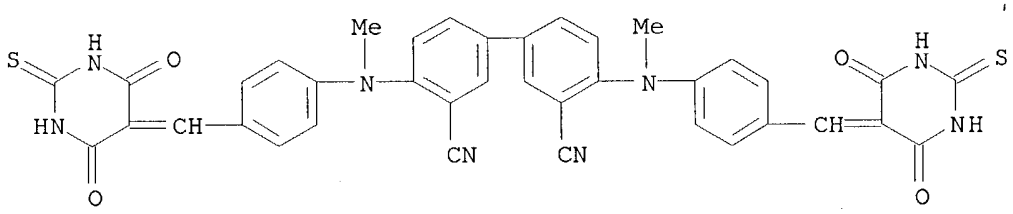
CN 4,6(1H,5H)-Pyrimidinedione, 5,5'-[1,4-phenylenebis[(phenylimino)-4,1-phenylenemethylidyne]]bis[dihydro-2-thioxo- (9CI) (CA INDEX NAME)



IT **166307-60-4**
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(photosensitive layer of electrophotog. photoreceptor)

RN 166307-60-4 HCAPLUS

CN [1,1'-Biphenyl]-3,3'-dicarbonitrile, 4,4'-bis[methyl[4-[(tetrahydro-4,6-dioxo-2-thioxo-5(2H)-pyrimidinylidene)methyl]phenyl]amino]- (9CI) (CA INDEX NAME)



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